

LISTING OF CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An imaging apparatus, comprising:

a light source device;

an image pickup device for converting a living body observed image to video signals by using light irradiated from the light source device for observation; and

a processor for generating a living body image from the video signals, ~~the processor including means for generating a living body image having at least a scattering feature of a relative scattering change representing a degree of nucleus variant and structure variant of a living body tissue as image information, wherein~~ the processor including means for generating a living body image having at least a scattering feature of a relative scattering change representing a degree of nucleus variant and structure variant of a living body tissue as image information, and

the light source device irradiates a plurality of band light beams that exist in a band positioned as blue light in a visual light wavelength range ~~by switching the plurality of band light beams to a field-sequential light, wherein~~

the processor generates the living body image based on narrow band images obtained in synchronization with each irradiation of the plurality of band light beams and on an optical model corresponding to a particle size distribution of the living body tissue.

2. (Original) The imaging apparatus according to Claim 1, wherein the image pickup device is an endoscope.

3.-18. (Cancelled)

19. (Withdrawn) A living body scattering imaging apparatus, comprising scattering feature computing means for calculating a scattering feature from a living body tissue image and image generating means for generating an image based on the scattering feature, wherein, in a case where the living body tissue is modeled in two layers having a tissue surface layer and an internal layer other than the tissue surface layer, the scattering feature computing means calculates the scattering feature by applying a mapping of one or more image values or observation values based on the image values to a scattering feature space maximizing a change in scattering feature of the tissue surface layer under a condition minimizing an influence from a change in observation value occurring due to a change in optical characteristic of the internal layer.

20. (Withdrawn) The living body scattering imaging apparatus according to Claim 19, wherein the mapping is a linear mapping.

21. (Withdrawn) The living body scattering imaging apparatus according to Claim 20, wherein the linear mapping is calculated by multiple discrimination analysis in an observation value space and wherein an inter-class distribution and intra-class distribution in the multiple discrimination analysis correspond to a difference in scattering feature of the tissue surface layer and a difference in optical characteristic of the internal layer.

22. (Withdrawn) The living body scattering imaging apparatus according to Claim 21, wherein the difference in optical characteristic of the internal layer includes a thickness, absorption characteristic and scattering characteristic of the internal layer.

23. (Withdrawn) The living body scattering imaging apparatus according to Claim 21, wherein the difference in scattering characteristic of the tissue surface layer is modeled by using changes in probability density distribution of a nucleus diameter included in a living body tissue of the tissue surface layer.
24. (Withdrawn) The living body scattering imaging apparatus according to Claim 23, wherein the model includes a Mie scattering model and a light propagation model.
25. (Withdrawn) The living body scattering imaging apparatus according to Claim 24, wherein the light propagation model is a Montecarlo model.
26. (Withdrawn) The living body scattering imaging apparatus according to Claim 21, wherein the intra-class distribution in the multiple discrimination analysis is estimated from the living body tissue image.
27. (Withdrawn) The living body scattering imaging apparatus according to Claim 26, wherein the estimation of the intra-class distribution is performed from an image of the blood vessel running within a living body tissue.